

REMARKS

Claims 16-30 are presently in the application. The above amendments are being made to place the application in better condition for examination.

Reconsideration of the rejection of claims 16-21, 24-26 and 30 under 35 U.S.C. 102(b) as being anticipated by US Patent No. 3,185,258 to Douglas is respectfully requested.

Claim 16 is directed to a self-boosting electromechanical friction brake, comprising
a friction brake lining,
an electromechanical actuation device with which the friction brake lining can be pressed for braking against a brake body to be braked,
a ramp mechanism that extends at an angle to the brake body and that braces the friction brake lining on being pressed against the brake body, *the friction brake lining being supported displaceably in a direction of rotation of the brake body by roller bodies* on the ramp mechanism, wherein

the ramp mechanism has at least two ramps, a first ramp thereof being provided on a side of the friction brake lining facing away from the brake body and having a path extending in an inclined fashion in the direction of rotation of the brake body, a second ramp thereof being diametrically opposite the first ramp and having a path inclined in complementary fashion to the path of the first ramp;

and wherein the roller bodies are present which roll on tracks of the ramps, and
a positive controller for the roller bodies, which prevents the roller bodies from leaving their respective tracks.

Claim 16 has been amended to structurally distinguish the invention over the reference. The disclosure of the characteristics pertaining to the ramp mechanism is found in the original application paragraphs [0030-0032] wherein the displacement of the friction brake lining in the direction of rotation of the brake body is described.

Douglas discloses a self-boosting friction brake (14) including a friction brake lining (2/22), an actuation device (carrier/holder 1/21 moved by elements 6-12/24-36), a rotating brake disc (13), and a brake piston in a cylinder (hydraulic piston cylinder device 15, 16). The braking pressure exerted on the carrier moves the lining pad into pressure contact with the face of the rotating brake disk/swings the carrier about a point on the rack. The lining carrier plate (1) is braced on a stationary brake caliper by means of a pivotably supported pressure piece (strut 7). Brake pressure that acts on the lining carrier plate (1) via the brake piston (15) has the effect that the brake lining (2) is pressed against one side of a brake disk (13). Because of the pressure piece (7), the lining carrier (1) pivots about a pivot point marked (17) in Fig. 2 (column 2, lines 35-42).

Thus Douglas differs from the subject of the present invention in that the actuation of the friction brake is effected by pressure means, not electromechanically. Douglas lacks an electromechanical actuating device. Furthermore bracing of the friction brake lining upon pressing against the brake disk is effected at the brake piston and at the pressure piece, but not at the ramps of a ramp mechanism. Douglas further lacks *ramps on the side of the friction brake lining facing away from the brake body (brake disk) and a second ramp diametrically opposite thereto*. The known pressure piece (7) of Douglas executes merely a

pivoting motion about a defined angular range. By comparison, roller bodies according to the invention are rotationally symmetrically embodied components which are capable of rolling over their entire outer circumference. The pressure piece is therefore not a roller body in the sense of the invention. Therefore Douglas cannot anticipate the present invention as required by 35 U.S.C 102. Accordingly, withdrawal of the rejection is respectfully requested.

Reconsideration of the rejection of claims 16-19 and 22-30 under 35 U.S.C. 103(a) as being unpatentable over US Patent No.1,696,879 to Chase is respectfully requested.

Chase teaches a friction brake lining (25a,b), an actuation device (Fig. 2), a brake disk (12/14), a ramp mechanism (19a,b, 23a,b), roller bodies (24), a positive controller/roller body cage (26) for the roller bodies, and raceways (19). The balls are actuated to spread the ramps/rings away from one another to push the friction linings disposed thereon into the plates producing the braking effect.

In Chase the ramp mechanism described and shown corresponds with the some of the elements of the present invention. However, an actuation of the brake is effected mechanically, via levers and rods (33, 35, 36), and/or electromagnetically (electromagnet 38), but not electromechanically as required by the structural arrangement of the recited elements.

In the event of an actuation of the brake according to Chase, a bearing cage (plate 26) of the balls (24) moves relative to rings that have ramps (channel rings forming a cage for the balls). In the process, the balls roll in their ball guides and spread the rings (channel rings) apart (page 1, right-hand column, line 89, "rotatably mounted plate 26" and line 99 ff, and

page 2, left-hand column, line 3 ff). These rings are equipped with friction brake linings (25a, b; page 1, right-hand column, line 85). They are pressed against brake disks (disk 12, ring 14) connected solidly to a wheel and thereby brake the rotary motion of the brake disks.

Accordingly, an essential difference from the present invention is that for actuating the brake in Chase the bearing cage (26), and not the friction brake lining, is displaced in the direction of rotation of the brake disk. Chase accordingly does not show or suggest the characteristic of *a friction brake lining (with roller bodies on the ramp mechanism) supported displaceably in the direction of rotation of the brake disk* as required by claim 16. Therefore Chase cannot render the present invention obvious as required by 35 U.S.C 103. Accordingly, withdrawal of the rejection is respectfully requested.

Reconsideration of the rejection of claims 16, 17, 19, 20, 21, 24, 25, and 30 under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 4,442,930 to Montalvo, Sr. is respectfully requested.

Montalvo describes a pneumatically actuated, contact-pressure-boosting piston/cylinder unit for brakes and clutches (title: air actuated force intensifying piston and cylinder assembly for brakes and clutches) having a first pneumatically actuatable piston (abstract: air- operated diaphragm-type piston 57) and a second piston coupled with it (working piston 50). The first piston (57), in its interior, has a gear wheel mechanism (gear tooth configuration 68) for actuating a cam disk (flat member 74). With an axial motion of the first piston (57) tripped by pneumatic pressure, the cam disk is pivoted by the gear wheel mechanism in such a way that with an increasing axial motion of the first piston (57), the

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cam disk presses more strongly against the second piston (50), and as a result presses a friction brake lining (friction shoe 40) with increased force against a brake body (plate 17).

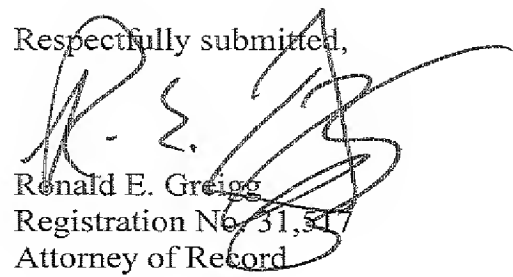
Montalvo differs from the present invention in that the piston/cylinder unit is pneumatically actuated, and the force boosting effected is performed purely mechanically. Montalvo lacks electromechanical actuation as required by the structural arrangement of the recited elements. Furthermore, Montalvo lacks a ramp mechanism with *a ramp, inclined in the direction of rotation of the brake body, on the side of the friction brake lining facing away from the brake body*. There is no teaching or suggestion of a second ramp diametrically opposite to the first ramp, roller bodies rolling between the ramps and hence no automatic controller for roller bodies. Therefore Montalvo cannot render the present invention obvious as required by 35 U.S.C 103. Accordingly, withdrawal of the rejection is respectfully requested.

The above amendments are being made to place the application in better condition for examination and allowance.

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Entry of the amendment is respectfully solicited.

Respectfully submitted,



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